HANS-ERIK ANDERSEN

· Resource Monitoring and Assessment/Forest Inventory and Analysis · USDA Forest Service PNW Research Station·
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RESEARCH INTERESTS

Remote sensing, forest measurements, analytical photogrammetry, image analysis, spatial analysis, forest inventory design

EDUCATION

University of Washington, Seattle, Washington
Ph.D., Quantitative Resource Management (Forest Biometrics), February, 2003

• Dissertation Topic: "Estimation of critical forest structure metrics through the spatial analysis of airborne laser scanner data"

• Advisor: Gerard F. Schreuder

M.S., Forest Resources, August, 1997

• Research Topic: "Photographic scale effects on the detection of forest mortality: implications for timber salvage planning in Warm Springs Indian Reservation, Oregon"

International Institute for Geo-Information Science and Earth Observation (ITC), Enschede, The Netherlands
Professional Master *with distinction*, Forest Survey, August, 1998

• Research Topic: "Automated measurement of changes in forest stand height using digital photogrammetry"

Williams College, Williamstown, Massachusetts
B.A. *cum laude*, History, June, 1994

PROFESSIONAL EXPERIENCE

USDA Forest Service Pacific Northwest Research Station, Seattle, Washington USA
Supervisory Research Forester, September, 2011 – present

• Team leader for Vegetation Monitoring and Remote Sensing team within Resource Monitoring and Assessment/Forest Inventory and Analysis program.

• Responsible for managing $1M team budget and supervising 6 scientists located in Alaska, Washington, and Oregon.

USDA Forest Service Pacific Northwest Research Station, Anchorage, Alaska USA
Research Forester, September, 2006 – 2011

• Remote sensing scientist within Forest Inventory and Analysis (FIA) program.

• Technical expert regarding forest monitoring, remote sensing, and spatial analysis.

• Co-investigator on NASA-funded investigation: "Using the ICESAT-GLAS lidar to estimate the amount, spatial distribution, and statistical uncertainty of aboveground carbon stocks of the North American boreal forest.

University of Washington College of Forest Resources, Seattle, Washington USA
Affiliate Assistant Professor, October, 2006 – present

• Advise and mentor graduate students on thesis projects.

• Co-investigator on several UW-PNW cooperative projects.

• Member of Graduate School faculty.

University of Washington Precision Forestry Cooperative, Seattle, Washington USA

Research Scientist, March, 2003 – September, 2006

• Technical lead on Joint Fire Science Program (JFSP)-funded investigation of high resolution, active remote sensing technologies (IFSAR, LIDAR) for estimation of canopy fuel variables. Grant award $699,000.

• Principal investigator on JFSP-funded investigation of pre-fire fuels loading and burn intensity using pre-fire IFSAR combined with multi-spectral imagery for 2003 southern California fires. Grant award $532,000.

• Principal investigator on federally-funded investigation of the utility of LIDAR as a source of information for the nationwide Forest Inventory and Analysis (FIA) program. Grant award $350,000.

• Supervisor and committee member for several graduate students in the College of Forest Resources. Supervised field validation work and advised students on development of thesis projects.

• Co-instructor for course on "Aerial Photos and Remote Sensing of Natural Resources." Presented lectures on topics such as analytical photogrammetry, digital photogrammetry, LIDAR, SAR, IFSAR, and multispectral remote sensing.

• Responsible for establishing budgets and schedules to ensure success of projects.

Graduate Research Assistant, June, 2000 - February, 2003

• Developed methodology for analysis of forest structure characteristics, including canopy cover, vertical foliage distribution, and canopy gap distributions using LIDAR data at Fort Lewis Military Reservation, Washington.

• Developed methodology for automated measurement of individual tree dimensions using a LIDAR based canopy surface model through application of advanced computer vision techniques.

University of Washington, Seattle, Washington
Instructor, June - August, 2001
Sole responsibility for lectures, exams, homework assignments, and grades
• QSCI 381: Introduction to Probability and Statistics, Summer 2001

Teaching Assistant, January, 1998 - May, 2000
Duties at various times included grading, lecturing, holding office hours and leading weekly lab exercises.
• QSCI 381: Introduction to Probability and Statistics
• FE 430: Aerial Photos and Remote Sensing of Natural Resources

PUBLICATIONS

Peer-reviewed journal articles

D'Oliveira, M., S. Reutebuch, R. McGaughey, H.-E. Andersen. In press. Estimating forest biomass and identifying low-intensity logging areas using airborne scanning lidar in Antimary State Forest, Acre State, Western Amazon. *Remote Sensing of Environment.*

Strunk, J., S. Reutebuch, H.-E. Andersen, P. Gould, and R. McGaughey. 2012. Model-Assisted Forest Yield Estimation with Light Detection and Ranging. *Western Journal of Applied Forestry* 27(2):53-59.

Andersen, H.-E., J. Strunk, H. Temesgen, D. Atwood, and K. Winterberger. 2011. Using multi-level remote sensing and ground data to estimate forest biomass resources in remote regions: a case study in the boreal forests of interior Alaska. *Canadian Journal of Remote Sensing* 37(6):1-16.

Andersen, H.-E., J. Strunk, and H. Temesgen. 2011. Using airborne light detection and ranging as a sampling tool for estimating forest biomass resources in the upper Tanana Valley of interior Alaska. *Western Journal of Applied Forestry* 26(4):157-164.

Kim, S., R.J. McGaughey, H.-E. Andersen, and G. Schreuder. 2009. Tree species differentiation using intensity data derived from leaf-on and leaf-off airborne laser scanner data. *Remote Sensing of Environment* 113(8): 1575-1586.

Sullivan, A., R.J. McGaughey, H.-E. Andersen, and P. Schiess. 2009. Object-oriented classification of forest structure from light detection and ranging data for stand mapping. *Western Journal of Applied Forestry* 24(4):198-204.

Andersen, H.-E., T. Clarkin, K. Winterberger, and J. Strunk. 2009. An accuracy assessment of geographic coordinates obtained using survey- and recreational-grade GPS units across a range of forest conditions within the Tanana Valley of interior Alaska. *Western Journal of Applied Forestry* 24(3):128-136.

Andersen, H.-E., and K. Winterberger. 2009. Using airborne lidar to characterize forest stand condition on the Kenai Peninsula of Alaska. *Western Journal of Applied Forestry* 24(2):95-102.

Pang, Y., M. Lefsky, H.-E. Andersen, M. Miller, and K. Sherrill. 2008. Validation of the ICESat vegetation product using crown-area-weighted mean height derived using crown delineation with discrete return lidar data. *Canadian Journal of Remote Sensing*, Vol. 34, Supplement 2, pp. S471-S484.

Li, Y., H.-E. Andersen, and R.J. McGaughey. 2008. A comparison of statistical methods for estimating forest biomass from light detection and ranging data. *Western Journal of Applied Forestry* 23(4): 223-231.

Breidenbach, J., E. Kublin, R. McGaughey, H.-E. Andersen, and S. Reutebuch. 2008. Mixed-effects models for estimating stand volume by means of small footprint airborne laser scanner data. *The Photogrammetric Journal of Finland* 21(1): 4-15.

Andersen, H.-E., R.J. McGaughey, and S.E. Reutebuch. 2008. Assessing the influence of flight parameters, interferometric processing, slope, and canopy density on the accuracy of X-band IFSAR-derived forest canopy height models. *International Journal of Remote Sensing* 29(5): 1495-1510.

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2006. A rigorous assessment of tree height measurements obtained using airborne lidar and conventional field methods. *Canadian Journal of Remote Sensing* 32(5): 355-366. Awarded Second Place in the "CJRS Best Paper of the Year - 2006 Competition".

Reutebuch, S.E., H.-E. Andersen, and R.J. McGaughey. 2005. LIDAR: An emerging tool for multiple resource inventory. *Journal of Forestry* 103(6):286-292.

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2005. Accuracy of an IFSAR-derived digital terrain model under a conifer forest canopy. *Canadian Journal of Remote Sensing* 31(4):283-288.

Andersen, H.-E., R.J. McGaughey, and S.E. Reutebuch. 2005. Estimating forest canopy fuel parameters using LIDAR data. *Remote Sensing of Environment* 94:441-449.

Zhao, G., G. Shao, K. M. Reynolds, M.C. Wimberly, T. Warner, J.W. Moser, K. Rennolls, S. Magnussen, M. Kohl, H.-E. Andersen, G.A. Mendoza, L. Dai, A. Huth, L. Zhang, J. Brey, Y. Sun, R. Ye, B.A. Martin, and F. Li. 2005. Digital Forestry: A White Paper. *Journal of Forestry* 103(1):47-50.

Reutebuch, S.E., R.J. McGaughey, H.-E. Andersen, and W. Carson. 2003. Accuracy of a high-resolution LIDAR-based terrain model under a conifer forest canopy. *Canadian Journal of Remote Sensing* 29(5): 1-9.

Peer-reviewed book chapters

Andersen, H.-E. 2012. Chapter 10: High-Resolution Three-Dimensional Remote Sensing for Forest Measurement. In: Pears, N., Y. Liu, and P. Bunting, eds., *3D Imaging, Analysis and Applications*, Springer, London.

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2006. Chapter 3: Active remote sensing. In: Shao, G., and K. Reynolds, eds., *Computer Applications in Sustainable Forest Management*, Springer-Verlag, Dordrecht.

Peer-reviewed conference proceedings

Andersen, H.-E., and J. Breidenbach. 2007. Statistical properties of mean stand biomass estimators in a lidar-based double sampling forest survey design. *Proceedings of the ISPRS workshop on Laser Scanning, Espoo, Finland, September 12-14, 2007.*

Breidenbach, J., R.J. McGaughey, H.-E. Andersen, G. Kandler, and S.E. Reutebuch. 2007. A mixed-effects model to estimate stand volume by means of small footprint airborne lidar data for an American and a German study site. *Proceedings of the ISPRS workshop on Laser Scanning, Espoo, Finland, September 12-14, 2007.*

Andersen, H.-E., R.J. McGaughey, W.W. Carson, S.E. Reutebuch, B. Mercer, and J. Allan. 2003. A comparison of forest canopy models derived from LIDAR and IFSAR data in a Pacific Northwest conifer forest. *International Archives of Photogrammetry and Remote Sensing*, Dresden, Germany, Vol. XXXIV, Part 3 / W13.

Andersen, H.-E., S.E. Reutebuch, and G.F. Schreuder. 2002. Bayesian object recognition for the analysis of complex forest scenes in airborne laser scanner data. *International Archives of Photogrammetry and Remote Sensing*, Graz, Austria, Vol. XXXIV, Part 3A, pp. 35-41.

Andersen, H.-E., S.E. Reutebuch, and G.F. Schreuder. 2001. Automated individual tree measurement through morphological analysis of a LIDAR-based canopy surface model. *Proceedings of the First International Precision Forestry Symposium, Seattle, WA, USA, June 17-20, 2001*.

Non-peer-reviewed conference proceedings and technical reports

Andersen, H.-E. 2011. Biomass and carbon. In: Barrett, T., and G. Christensen. G. 2011. *Forests of southeast and south-central Alaska, 2004-2008: Five-year forest inventory and analysis report*. Gen. Tech. Rep. PNW-GTR-835. USDA Forest Service, Pacific Northwest Research Station, Portland, OR.

Gatziolis, D., and H.-E. Andersen. 2008. *A guide to LIDAR data acquisition and processing for the forests of the Pacific Northwest.* General Technical Report PNW-GTR-768. U.S. Department of Agriculture Forest Service, Pacific Northwest Research Station, Portland, OR.

Kim, S., G. Schreuder, R.J. McGaughey, and H.-E. Andersen. 2008. Individual tree species identification using lidar intensity data. *Proceedings of the ASPRS 2008 Annual Conference, Portland, Oregon, April 28-May 2, 2008*.

McGaughey R.J., S.E. Reutebuch, and H.E. Andersen. 2007. Creation and use of LIDAR intensity images for natural resource applications. *Proceedings of the 21st Biennial Workshop on Aerial Photography, Videography, and High Resolution Digital Imagery for Resources Assessment, Terre Haute, Indiana, USA, May 15-17, 2007.*

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2006. Assessing the influence of flight parameters and interferometric processing on the accuracy of X-band IFSAR-derived forest canopy surface models. In: Koukal, T. and W. Schneider, eds., *Proceedings of the EARSeL Workshop on 3D Remote Sensing in Forestry, Vienna, Austria, February 14-15, 2006.* University of Natural Resources and Applied Life Sciences (BOKU) Vienna.

Andersen, H.-E., R.J. McGaughey, and S.E. Reutebuch. 2005. Forest measurement and monitoring using high-resolution airborne lidar. In: Harrington, C.A. and S.H. Schoenholtz, eds., *Productivity of Western forests: A Forest Products Focus*, General Technical Report PNW-GTR-642. U.S. Department of Agriculture Forest Service, Pacific Northwest Research Station, Portland, OR.

Andersen, H.-E., R.J. McGaughey, S.E. Reutebuch, G.F. Schreuder, J. Agee, and B. Mercer. 2004. Estimating canopy fuel parameters in a Pacific Northwest conifer forest using multifrequency polarimetric IFSAR. *International Archives of Photogrammetry and Remote Sensing*, Istanbul, Turkey, Vol. XXXV, Part B.

Andersen, H.-E., R.J. McGaughey, S.E. Reutebuch, W.W. Carson and G.F. Schreuder. 2004. Estimating forest crown fuel variables using LIDAR data. *Proceedings of the Annual ASPRS Conference, Denver, May 23-28, 2004*. American Society of Photogrammetry and Remote Sensing, Bethesda, MD.

McGaughey, R.J., W.W. Carson, S.E. Reutebuch, and H.-E. Andersen. 2004. Direct measurement of individual tree characteristics from LIDAR data. *Proceedings of the Annual ASPRS Conference, Denver, May 23-28, 2004*. American Society of Photogrammetry and Remote Sensing, Bethesda, MD.

Carson, W., Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2004. LIDAR applications in forestry: An overview. *Proceedings of the Annual ASPRS Conference, Denver, May 23-28, 2004*. American Society of Photogrammetry and Remote Sensing, Bethesda, MD.

Andersen, H.-E., J. Foster, and S.E. Reutebuch. 2003. Estimating forest structure parameters within Fort Lewis Military Reservation using airborne laser scanner (LIDAR) data. 2003. *Proceedings of the Second International Precision Forestry Symposium, USA, June 16-18, 2003*.

Reutebuch, S.E., H.-E. Andersen, K. Ahmed, T. Curtis. Evaluation of laser light detection and ranging (LIDAR) measurements in a forested area. 2003. In: Curtis, R., D. Marshall, and D. DeBell, eds., *Silvicultural options for young-growth Douglas-fir forests: The Capitol Forest Study–Establishment and First Results*. General Technical Report PNW-GTR-598. U.S. Department of Agriculture Forest Service, Pacific Northwest Research Station, Portland, OR.

Andersen, H.-E., S.E. Reutebuch, and G. Keane. Locating dead timber using two scales of color aerial photography on the Warm Springs Reservation, Oregon. 1999. *Proceedings of the 17th Biennial Workshop on Color Photography and Videography in Resource Assessment, Reno, NV, USA, May 5-7, 1999*.

PAPERS IN PREPARATION

Strunk, J. L., H. Temesgen, and H. E. Andersen. In review. Two-Stage Regression Estimation of Biomass with Multi-Temporal Landsat and a Sample of Lidar Strips - A Case Study on the Kenai Peninsula, Alaska.

Strunk, J., H. Temesgen, H.-E. Andersen, J. W. Flewelling, and L. Madsen. In review. Effects of Pulse Density and Sample Size on Estimation of Forest Yield Variables in a Model-Assisted Framework. Canadian Journal of Forest Research.

PRESENTATIONS

J. L. Strunk, H. Temesgen, and H. E. Andersen. 2011. "Two-stage Model-Assisted Biomass Estimation with LiDAR and Landsat," *Presentation at World Forestry Center, Portland Oregon, December 9, 2011*.

J. L. Strunk, H. Temesgen, and H. E. Andersen. 2011. "A Brief look at Two-Stage Lidar and Landsat assisted Estimation on the Kenai Peninsula, Alaska (Preliminary Results)," *Presentation at Vancouver Water Resources Education Center, Vancouver, WA, November 7, 2011*.

Andersen, H.-E., K. Winterberger, and T. Clarkin. 2009. Using advanced GPS technology to improve the accuracy of plot coordinates in the Alaska forest inventory. *Presentation at the FIA Science Symposium, Salt Lake City, UT, Oct. 21-23, 2008*.

Andersen, H.-E., and K. Winterberger. 2008. Use of airborne laser scanning as a component of a multi-level forest inventory sampling design on the Kenai Peninsula of Alaska. *Presentation at the 12th Biennial USDA Forest Service Remote Sensing Applications Conference (RS-2008), Salt Lake City, UT, April 15-17, 2008*.

Andersen, H.-E. 2008. Forest assessment and monitoring using LIDAR. *Presentation at the Society of American Foresters (SAF) Cook Inlet Chapter Meeting, Anchorage, AK, April 4, 2008*.

Andersen, H.-E, K. Winterberger, and T. Barrett. 2008. Use of active satellite remote sensing to estimate biomass/carbon: An (Alaska) FIA perspective. *Presentation at the NASA Veg3D and Biomass Workshop: Defining Science and Measurement Requirements for Future Spaceborne Missions, Charlottesville, VA, March 3-5, 2008*.

Andersen, H.-E. 2007. Forest measurement and monitoring using LIDAR. *Presentation at the Alaska Northern Forests Cooperative Meeting, Fairbanks, AK, October 17-18, 2007*.

Andersen, H.-E. 2007. Forest measurement and monitoring using LIDAR. *Presentation at the Society of American Foresters (SAF) Alaska Regional Meeting,, Anchorage, AK, April 27, 2007*.

Andersen, H.-E. and R.J. McGaughey. 2007. A method to generate detailed forest canopy surface models through the fusion of high-resolution X-band radar backscatter and interferometric height data. *Presentation at the Alaska Surveying and Mapping Conference, Fairbanks, AK, March 19-23, 2007*.

Andersen, H.-E., R.J. McGaughey, and S.E. Reutebuch. 2007. National Lidar Initiative Meeting: A US Forest Service

Perspective. *Presentation at the First National Lidar Initiative Meeting, February 14-16, 2007, Reston, VA.*

McGaughey, R.J., H.-E. Andersen, and S.E. Reutebuch. 2006. Characterizing vegetation structure using discrete-return airborne laser scanner data. *Presentation at the Annual Conference of The Wildlife Society, Anchorage, AK, September 25-27, 2006.*

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2006. Forest measurement and monitoring using high-resolution airborne LIDAR. *Society of American Foresters (SAF) North Puget Sound Chapter meeting, Mount Vernon, WA, June 14, 2006.*

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2006. Forest measurement and monitoring using high-resolution airborne LIDAR. *Oregon State University American Society of Photogrammetry and Remote Sensing (ASPRS) Student Chapter meeting, Corvallis, OR, June 2, 2006.*

McGaughey, R.J., H.-E. Andersen, and S.E. Reutebuch. 2006. Considerations for planning, acquiring, and processing LIDAR data for forestry applications. *Eleventh Biennial USDA Forest Service Remote Sensing Applications Conference, Salt Lake City, UT, April 24-28, 2006.*

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2006. Forest measurement and monitoring using high-resolution airborne LIDAR. *Society of American Foresters (SAF) South Puget Sound Chapter meeting, Fife, WA, March 16, 2006.*

McGaughey, R.J., H.-E. Andersen, and S.E. Reutebuch. 2006. LIDAR remote sensing for characterizing and visualizing vegetation structure. *Presentation to the NOAA National Marine Fisheries Staff, Seattle, WA, March 15, 2006.*

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2006. Assessing the influence of flight parameters and interferometric processing on the accuracy of X-band IFSAR-derived forest canopy surface models. *EARSeL Workshop on 3D Remote Sensing in Forestry, Vienna, Austria, February 14-15, 2006.*

McGaughey, R.J., H.-E. Andersen, and S.E. Reutebuch. 2005. LIDAR applications in forestry. *Presentation at the Annual Meeting of the University of Washington College of Forest Resources Alumni Association, Seattle, WA, November 4, 2005.*

McGaughey, R.J., H.-E. Andersen, and S.E. Reutebuch. 2005. LIDAR Remote Sensing for characterizing and visualizing vegetation structure. *National Meeting of the Society of American Foresters, Fort Worth, TX, October 19-23, 2005.*

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2005. Remote sensing research within the UW Precision Forestry Cooperative. *Weyerhaeuser Western Forestry Research Conference, Skamania, WA, October 13, 2005.*

McGaughey, R.J., H.-E. Andersen, and S.E. Reutebuch. 2005. Comparing estimates of canopy structure derived from leaf-on and leaf-off airborne laser scanner data. *Silviscan: Lidar Applications in Forest Assessment and Inventory, Blacksburg, Virginia, September 29 - October 1, 2005.*

Andersen, H.-E., R.J. McGaughey, and S.E. Reutebuch. 2005. Assessment of LIDAR-derived forest measurements as a source of data for forest growth models. *Silviscan: Lidar Applications in Forest Assessment and Inventory, Blacksburg, Virginia, September 29 - October 1, 2005.*

Schreuder, G.F. and H.-E. Andersen. 2005. Precision Forestry: Application of Advanced Technologies to Forest Resource Management. *XXII IUFRO World Congress, Brisbane, Australia, August 8-13, 2005.*

Schreuder, G.F., H.-E. Andersen, R.J. McGaughey and S.E. Reutebuch. 2005. Precision Forestry: Application of Advanced Technologies to Forest Resource Management. *Western Mensurationists' Meeting, Hilo, Hawaii, July 4-7, 2005.*

Andersen, H.-E., R.J. McGaughey, and S.E. Reutebuch. 2005. The use of high-resolution, active airborne remote sensing technologies to support precision forestry. *Second Appalachian Remote Sensing Conference, West Virginia University, Morgantown, West Virginia, May 11, 2005.* Invited keynote speaker.

Andersen, H.-E., R.J. McGaughey, and S.E. Reutebuch. 2004. Forest measurement using high resolution airborne LIDAR. *Productivity of Western Forests: A Forest Products Focus, Olympia, Washington, September 21-23, 2004*.

Andersen, H.-E., G.F. Schreuder, R.J. McGaughey, S.E. Reutebuch, and W.W. Carson. 2004. Estimating forest inventory parameters using high-resolution LIDAR and IFSAR. *1st International Workshop on Digital Forestry, Beijing, China, June 14-18, 2004*. Invited speaker.

Andersen, H.-E., G.F. Schreuder, J. Agee, R.J. McGaughey, and S.E. Reutebuch. 2004. Canopy fuels measurement with LIDAR and IFSAR. *Joint Fire Science Program (JFSP) Principal Investigator's Workshop, Phoenix, Arizona, April 13-15, 2004*. Received "Best Presentation Award" out of 67 presentations.

Mercer, B., J. Allan, C. Hoffman, M. Schwaebisch, S.E. Reutebuch, W. Carson, and H.-E. Andersen. P-Band Polarimetric InSAR (PolInSAR) for extraction of ground DTM beneath forest canopy. 2003. *International Geoscience and Remote Sensing Symposium, Toulouse, France, July 21-25, 2003.*

Mercer, B., J. Allan, N. Glass, C. Hoffman, M. Schwaebisch, S.E. Reutebuch, W. Carson, and H.-E. Andersen. 2003. Extraction of Bare-Earth DEMs Beneath Forest Canopy Using P-Band Polarimetric InSAR (PolInSAR). *Advanced SAR Workshop, Saint-Hubert, Quebec, Canada, June 25-27, 2003.*

Andersen, H.-E., R.J. McGaughey, W. Carson, S.E. Reutebuch, B. Mercer, and J. Allan. 2003. An evaluation of canopy height models obtained from LIDAR and InSAR data in a Pacific Northwest conifer forest. 2003. *ISPRS Workshop on Three-dimensional mapping using LIDAR and InSAR, Portland, Oregon, June, 2003*.

Mercer, B., J. Allan, N. Glass, S. Reutebuch, W. Carson, and H.-E. Andersen. 2003. Extraction of ground DEMs beneath forest canopy using P-band polarimeteric InSAR (PolInSAR). *ISPRS Workshop on Three-dimensional mapping using LIDAR and InSAR, Portland, Oregon, June, 2003.*

Andersen, H.-E., R.J. McGaughey, W. Carson, S.E. Reutebuch, B. Mercer, and J. Allan. 2003. An evaluation of canopy height models obtained from LIDAR and InSAR data in a Pacific Northwest conifer forest. *Second International Precision Forestry Symposium, Seattle, USA, June 16-18, 2003.*

Andersen, H.-E. 2003. Estimation of critical forest structure metrics through the spatial analysis of airborne laser scanner data. *Olympic Natural Resources Center Winter 2003 GIS Conference, Forks, WA, February 27-28, 2003*. Invited speaker.

Andersen, H.-E. 2002. The use of airborne laser scanner data (LIDAR) for forest measurement applications. *Western Mensurationists Conference, Leavenworth, WA, June 23-25, 2002*. Invited speaker.

Means, J.E., K. Winterberger, H.-E. Andersen, and D. Marshall. 2002. Estimating and mapping forest structural characteristics with small-footprint LIDAR. *Workshop on Three-dimensional Analysis of Forest Structure and Terrain using LIDAR Technology, Victoria, BC, Canada, March 14-15, 2002.*

PROFESSIONAL SERVICE

Reviewer for the following journals: *Canadian Journal of Remote Sensing*, *Photogrammetric Engineering and Remote Sensing*, *International Journal of Remote Sensing*, *Forest Biometrics, Modelling, and Information Sciences*, *Canadian Journal of Forest Research*, *Forest Science*, *Scandinavian Journal of Forest Research*, *Remote Sensing of Environment, International Journal of Computer Vision,* and *Journal of Vegetation Science.*

Program Committee Member, Joint Workshop of ISPRS and the German Association for Pattern Recognition "Object Extraction for 3D City Models, Road Databases and Traffic Monitoring - Concepts, Algorithms, and Evaluation" Vienna, Austria, August 29-30, 2005

Scientific Committee Member, SilviLaser 2008, Edinburgh, Scotland

Scientific Committee Member, SilviLaser 2009, College Station, Texas

Scientific Committee Member, SilviLaser 2010, Freiburg, Germany

Scientific Committee Member, SilviLaser 2011, Hobart, Australia

Scientific Committee Member, SilviLaser 2012, Vancouver, BC, Canada

PROFESSIONAL SOCIETIES

- American Society of Photogrammetry and Remote Sensing (ASPRS), Treasurer for Puget Sound region 2000 – 2003
- Society of American Foresters

COMPUTER SKILLS

- Statistical Packages: R, S-Plus, SPSS
- Programming Languages: IDL, C/C++, Java, Python
- Geographic Information Systems and Image Processing Software: ENVI, Erdas Imagine, ArcGIS

HONORS AND AWARDS

Byron and Alice Lockwood Graduate Fellowship, 1995-1996
Best Presentation Award, Joint Fire Science Program Principal Investigator Workshop, 2004
Exemplary Staff Research Award, University of Washington College of Forest Resources, 2005
Awarded *Second Place* in the "Canadian Journal of Remote Sensing Best Paper of the Year - 2006 Competition"
Certificate of Merit, USDA Forest Service, 2008, for "Research contributions important to integration of high resolution remote sensing methods into forest monitoring and assessment and high productivity as a research scientist"